FIG.1

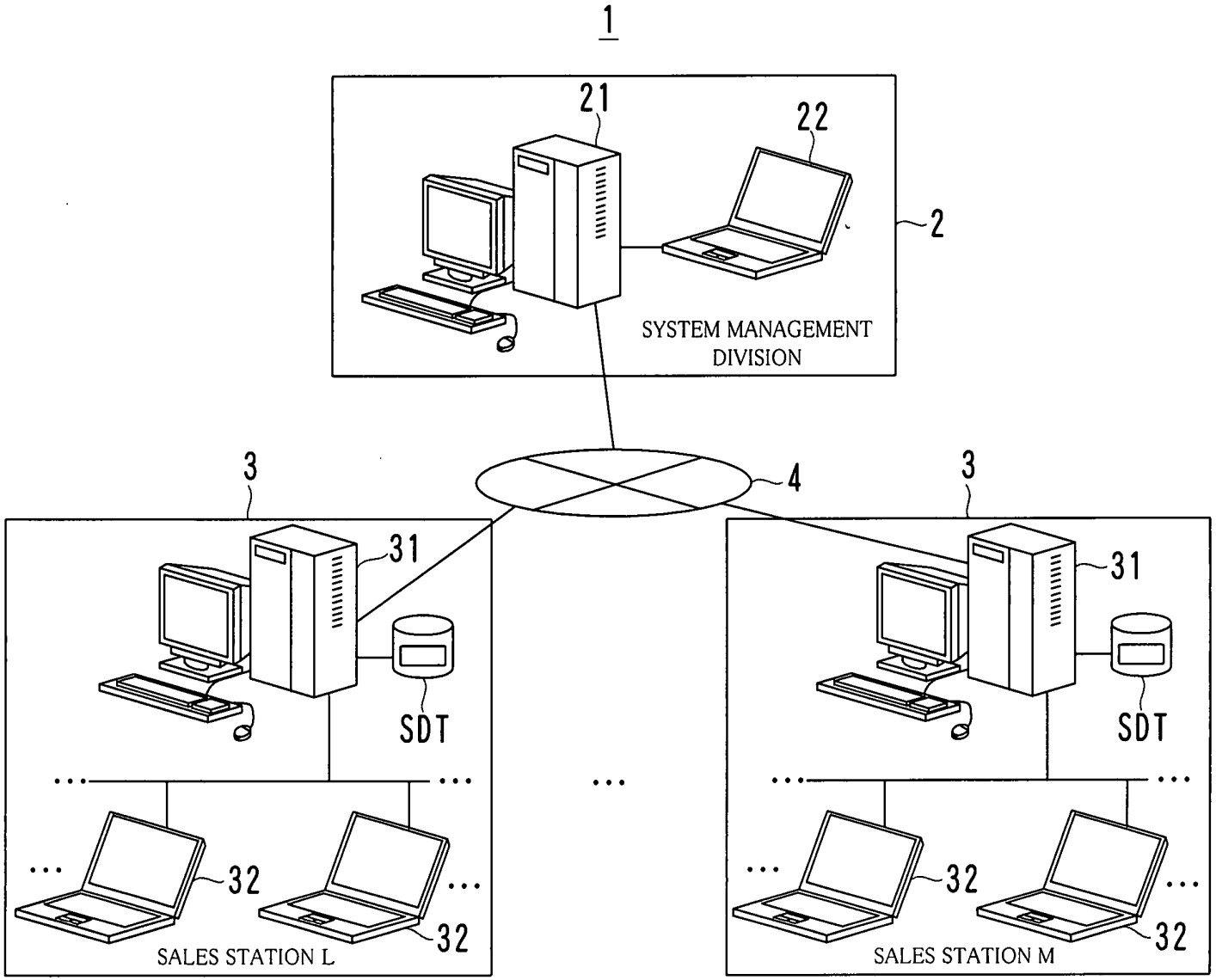

1
21
22
2
SYSTEM MANAGEMENT DIVISION
3
4
3
31
SDT
31
SDT
32
32
32
32
SALES STATION L
SALES STATION M

FIG.2

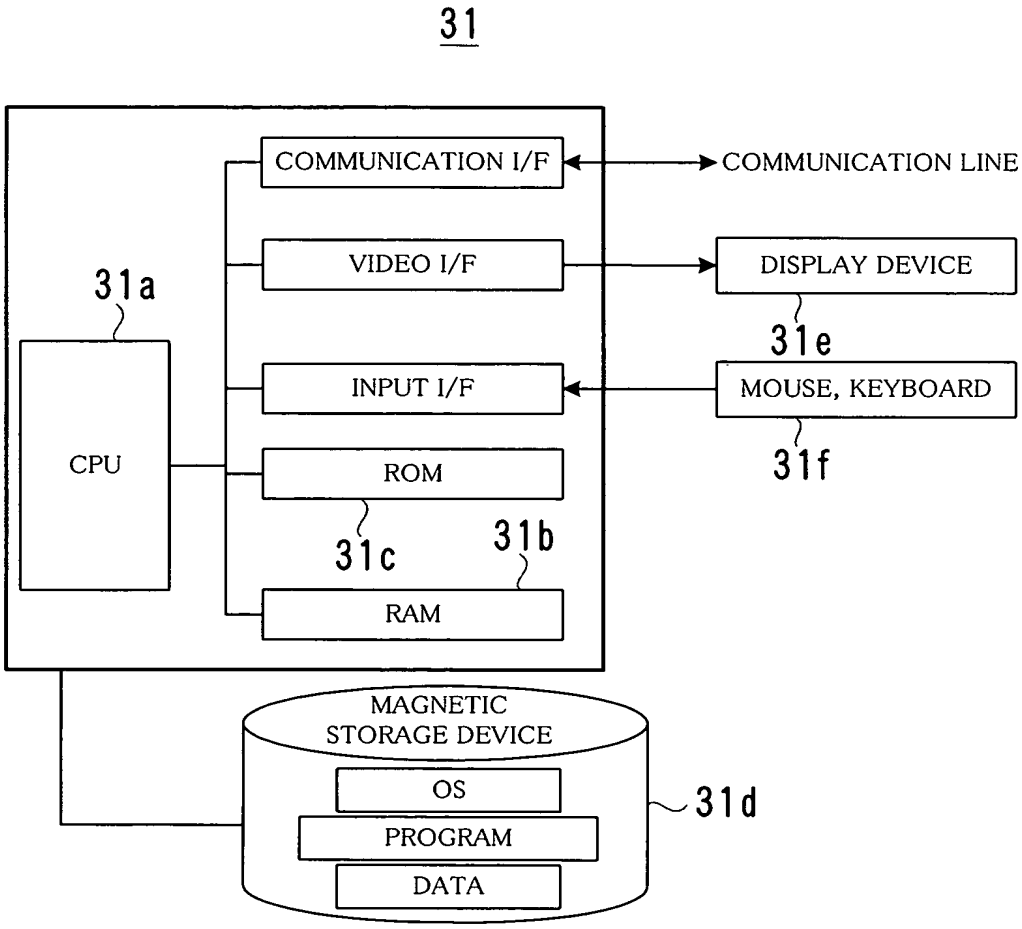

31
COMMUNICATION I/F
COMMUNICATION LINE
VIDEO I/F
DISPLAY DEVICE
31a
31e
INPUT I/F
MOUSE, KEYBOARD
CPU
ROM
31f
31c
31b
RAM
MAGNETIC
STORAGE DEVICE
OS
31d
PROGRAM
DATA

FIG.3

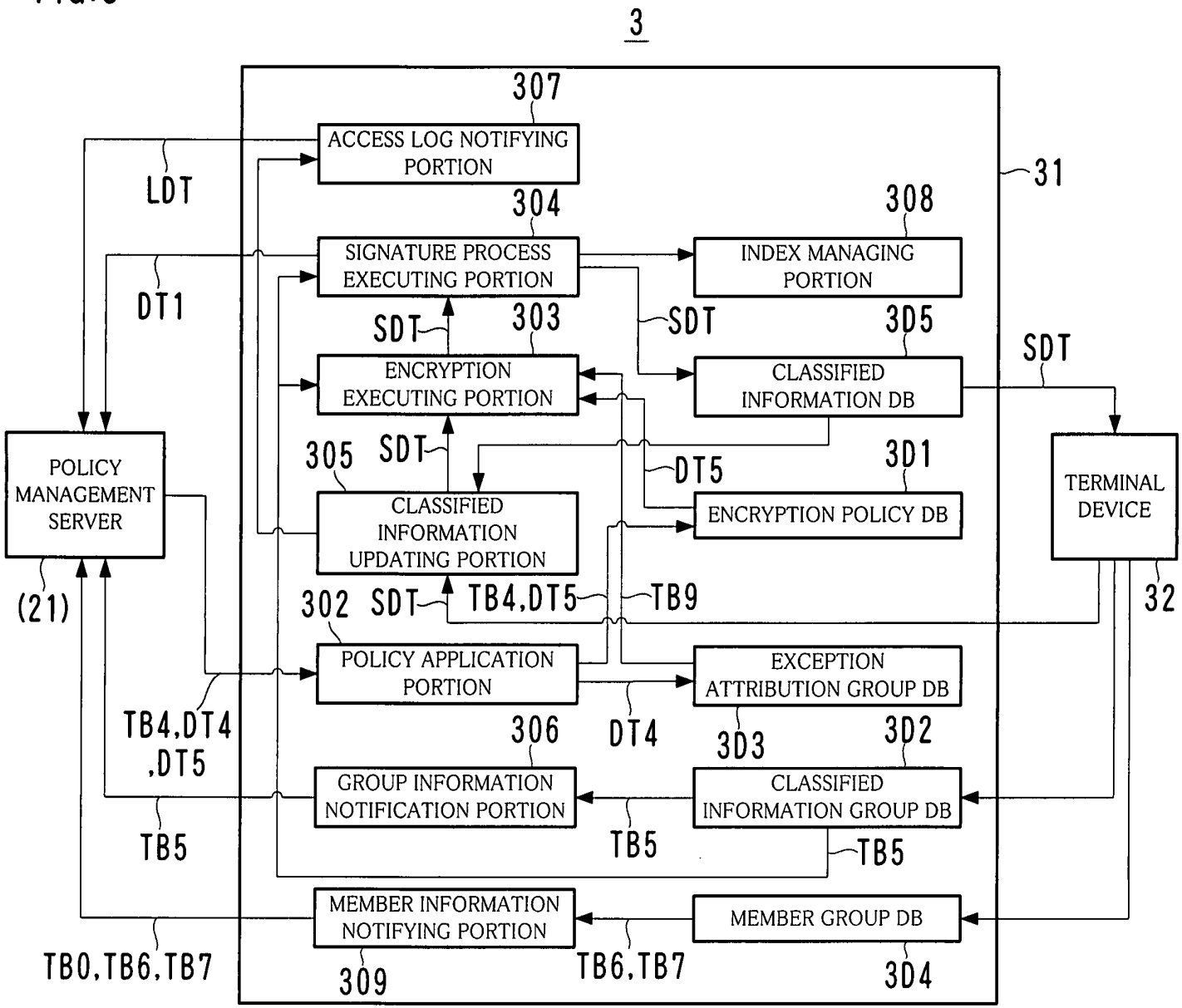

3
307
ACCESS LOG NOTIFYING PORTION
LDT
31
304
308
SIGNATURE PROCESS EXECUTING PORTION
INDEX MANAGING PORTION
DT1
SDT
303
SDT
305
SDT
ENCRYPTION EXECUTING PORTION
3D5
CLASSIFIED INFORMATION DB
SDT
POLICY MANAGEMENT SERVER
DT5
3D1
ENCRYPTION POLICY DB
TERMINAL DEVICE
CLASSIFIED INFORMATION UPDATING PORTION
(21)
302
SDT
TB4,DT5
TB9
32
POLICY APPLICATION PORTION
EXCEPTION ATTRIBUTION GROUP DB
TB4,DT4 ,DT5
306
DT4
3D3
3D2
GROUP INFORMATION NOTIFICATION PORTION
CLASSIFIED INFORMATION GROUP DB
TB5
TB5
TB5
MEMBER INFORMATION NOTIFYING PORTION
MEMBER GROUP DB
TB0,TB6,TB7
309
TB6,TB7
3D4

FIG.4

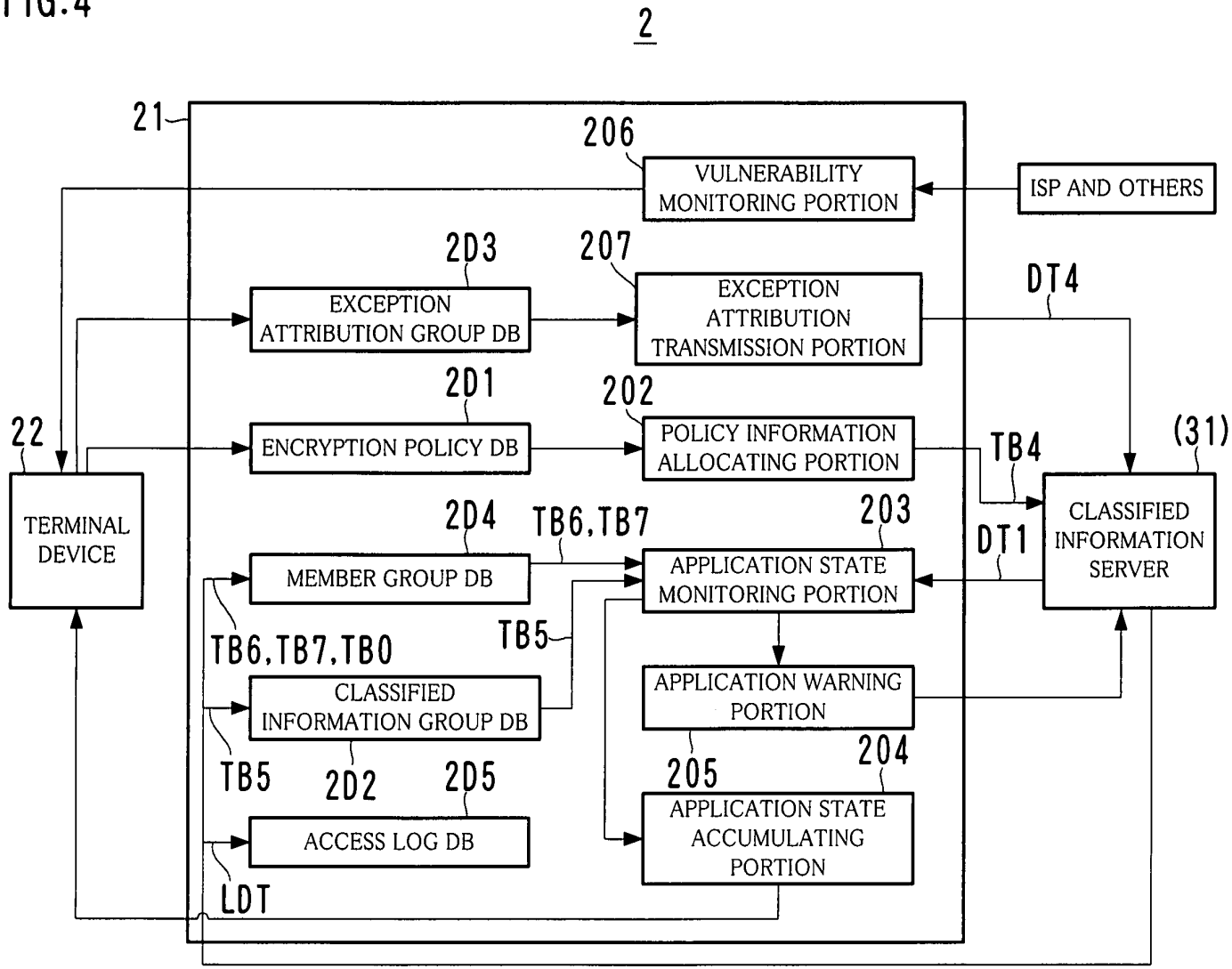

2
21
206
VULNERABILITY MONITORING PORTION
ISP AND OTHERS
2D3
207
EXCEPTION ATTRIBUTION GROUP DB
EXCEPTION ATTRIBUTION TRANSMISSION PORTION
DT4
2D1
202
22
ENCRYPTION POLICY DB
POLICY INFORMATION ALLOCATING PORTION
TB4
(31)
TERMINAL DEVICE
2D4
TB6,TB7
203
DT1
CLASSIFIED INFORMATION SERVER
MEMBER GROUP DB
APPLICATION STATE MONITORING PORTION
TB6,TB7,TB0
TB5
APPLICATION WARNING PORTION
CLASSIFIED INFORMATION GROUP DB
204
205
TB5
2D2
2D5
APPLICATION STATE ACCUMULATING PORTION
ACCESS LOG DB
LDT

FIG.5

TB4

ENCRYPTION RANK	ENCRYPTION SYSTEM	UPDATE FREQUENCY (EXPIRATION)	CLASSIFIED INFORMATION (CLASSIFICATION)
A	α ENCRYPTION SYSTEM	60 DAYS	OUTSIDE CONFIDENTIAL INFORMATION (CONFIDENTIAL LEVEL = HIGH)
B	β ENCRYPTION SYSTEM	600 DAYS	INTRA-COMPANY PERSONNEL MATTER
C	γ ENCRYPTION SYSTEM OR σ ENCRYPTION SYSTEM	INDEFINITE PERIOD	CUSTOMER INFORMATION
D	β ENCRYPTION SYSTEM	INDEFINITE PERIOD	EXTENSION NUMBER LIST INFORMATION OUTSIDE CONFIDENTIAL INFORMATION (CONFIDENTIAL LEVEL = LOW)
⋮	⋮	⋮	⋮

FIG.6

TB5

SERVER ID	SALES STATION HAVING SERVER	CLASSIFIED INFORMATION GROUP	ENCRYPTION RANK	USER GROUP	CLASSIFICATION OF CLASSIFIED INFORMATION (STORAGE PLACE)	ENCRYPTION SYSTEM	THE NUMBER OF ENCRYPTION BITS	RECORD NUMBER
S001	SALES STATION M	G1	C	THE FIRST SECTION (CUSTOMER WINDOW)	METER READ INFORMATION TABLE PAYMENT ACCOUNT TABLE	σ ENCRYPTION SYSTEM	128 BITS	100
S001	SALES STATION M	G2	B	THE SECOND SECTION (PERSONNEL DIVISION)	TABLE OF INTRA-COMPANY PERSONNEL MATTER	β ENCRYPTION SYSTEM	256 BITS	50
S001	SALES STATION M	G3	C	THE THIRD SECTION (DEVELOPMENT DIVISION)	SOURCE FILE DIRECTORY	σ ENCRYPTION SYSTEM	128 BITS	100
S002	SALES STATION L	G4	A	THE FOURTH SECTION (SALES DIVISION)	PRESENTATION DIRECTORY	α ENCRYPTION SYSTEM	256 BITS	25
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮

FIG.7

TB6

SERVER ID	USER GROUP (DIVISION)	MEMBER 1 (STAFF 1)	MEMBER 2 (STAFF 2)	...
S001	THE FIRST SECTION	AAA BBB	CCC DDD	...
	THE SECOND SECTION	EEE FFF	GGG HHH	...
	⋮	⋮	⋮	

FIG.8

TB7

SERVER ID	USER GROUP (DIVISION)	MEMBER (STAFF)	VALID TERM	SIGNATURE METHOD	THE NUMBER OF SIGNATURE BITS
S001	THE FIRST SECTION	AAA BBB	30/11/2005	RSA	1024 BITS
	THE FIRST SECTION	CCC DDD	30/06/2006	RSA	1024 BITS
	⋮	⋮	⋮	⋮	⋮

FIG.9

TB0a(TB0)

AAA BBB

SERVER ID	CLASSIFIED INFORMATION GROUP	DOCUMENT ID
S001	G1	004
S001	G1	077
S001	G3	200
⋮	⋮	⋮

TB0b(TB0)

CCC DDD

SERVER ID	CLASSIFIED INFORMATION GROUP	DOCUMENT ID
S001	G2	076
S001	G3	203
⋮	⋮	⋮

⋮

FIG.10

TB8

SALES STATION (DIVISION)	CLASSIFICATION OF CLASSIFIED INFORMATION	ENCRYPTION RANK
SALES STATION M	TABLE OF INTRA-COMPANY PERSONNEL MATTER	A
SALES STATION L	METER READ INFORMATION TABLE	A
ENTIRE COMPANY	PAYMENT ACCOUNT TABLE	A
⋮	⋮	⋮

FIG.11

TB9

CLASSIFICATION OF CLASSIFIED INFORMATION	ENCRYPTION RANK	
TABLE OF INTRA-COMPANY PERSONNEL MATTER	A	~DT4
PAYMENT ACCOUNT TABLE	A	~DT4
⋮	⋮	

FIG.12

TB1

CUSTOMER NUMBER	NAME	ADDRESS	TEL. NUMBER	
A0001	III JJJ	CC TOWN, BB CITY, AA PREFECTURE	012-345-6789	SDT
A0002	KKK LLL	DD TOWN, BB CITY, AA PREFECTURE	012-345-0000	SDT
⋮	⋮	⋮	⋮	

FIG.13

TB2

CUSTOMER NUMBER	METER READ VALUE	
A0001	950kWh	SDT
A0002	815kWh	SDT
⋮	⋮	

FIG.14

TB3

CUSTOMER NUMBER	PAYMENT METHOD	ACCOUNT NUMBER	
A0001	AUTOMATIC WITHDRAWAL	X BANK Y BRANCH SAVING ACCOUNT 012345	SDT
A0002	PAYMENT AT WINDOW	-	SDT
⋮	⋮	⋮	

FIG.15

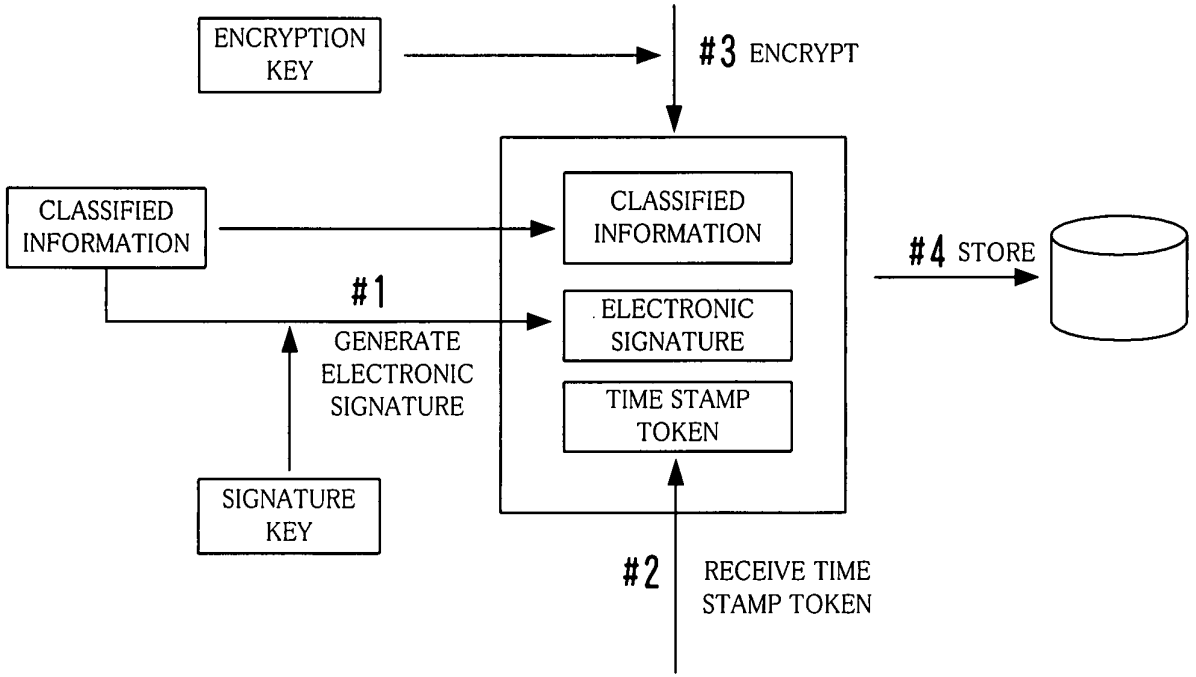

ENCRYPTION KEY
#3 ENCRYPT
CLASSIFIED INFORMATION
CLASSIFIED INFORMATION
#4 STORE
#1
ELECTRONIC SIGNATURE
GENERATE ELECTRONIC SIGNATURE
TIME STAMP TOKEN
SIGNATURE KEY
#2
RECEIVE TIME STAMP TOKEN

FIG.16A

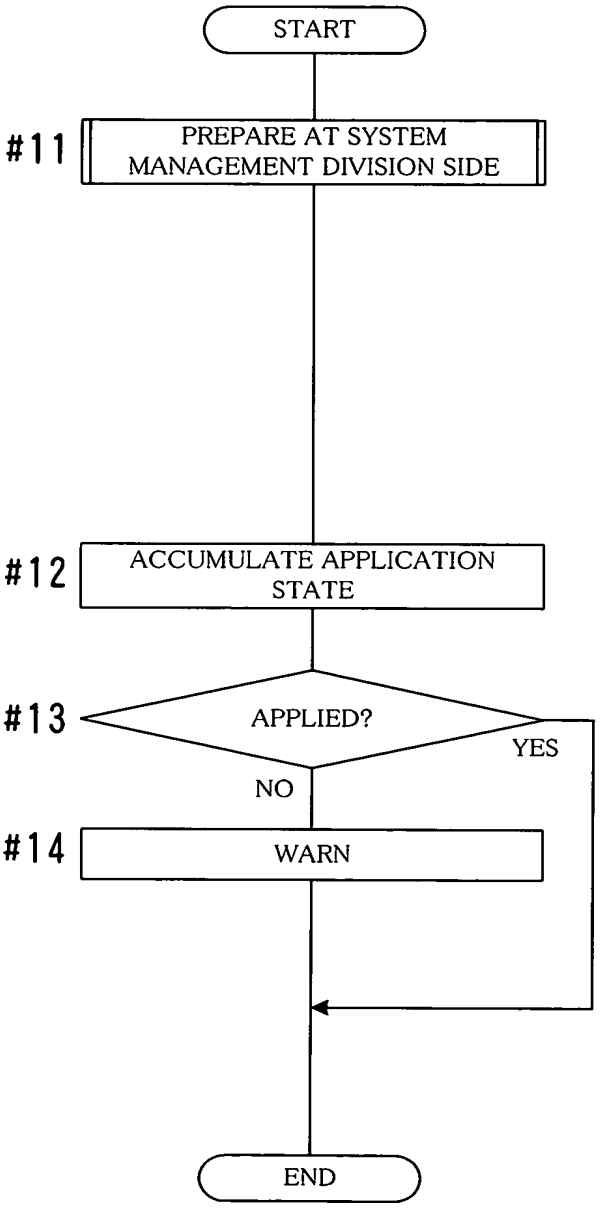


FIG.16B

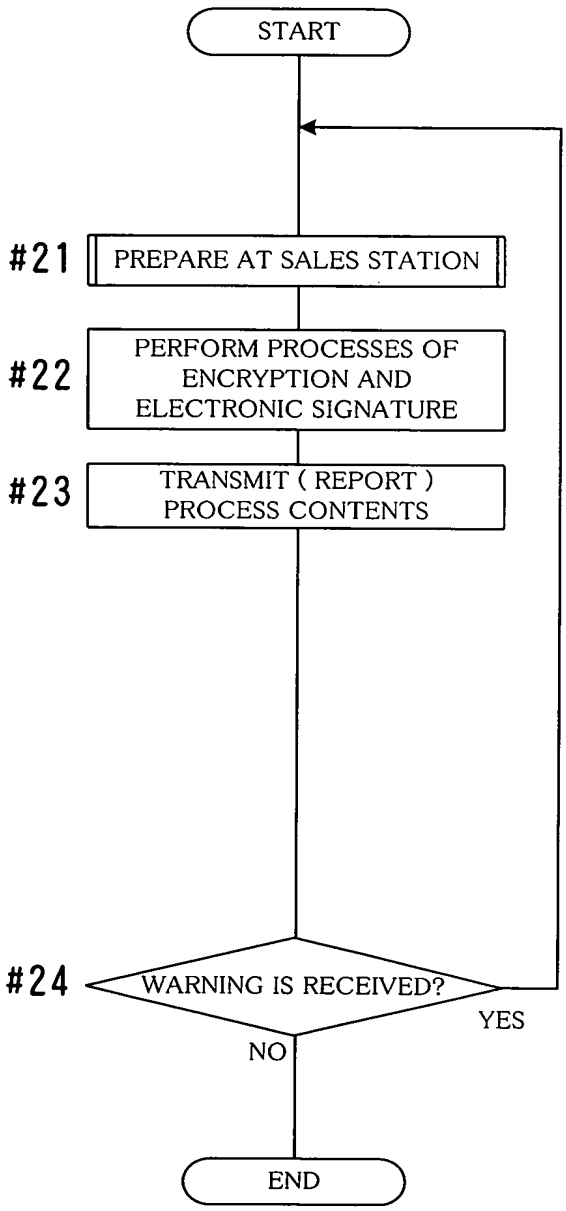


FIG.17

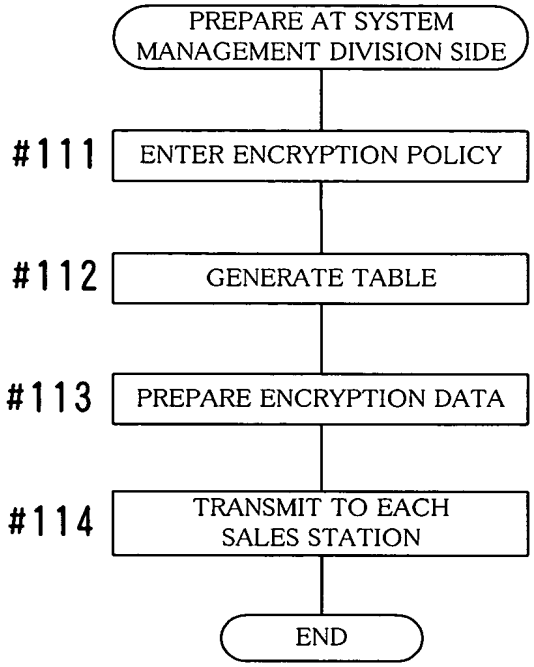

PREPARE AT SYSTEM MANAGEMENT DIVISION SIDE
#111
ENTER ENCRYPTION POLICY
#112
GENERATE TABLE
#113
PREPARE ENCRYPTION DATA
#114
TRANSMIT TO EACH SALES STATION
END

FIG.18

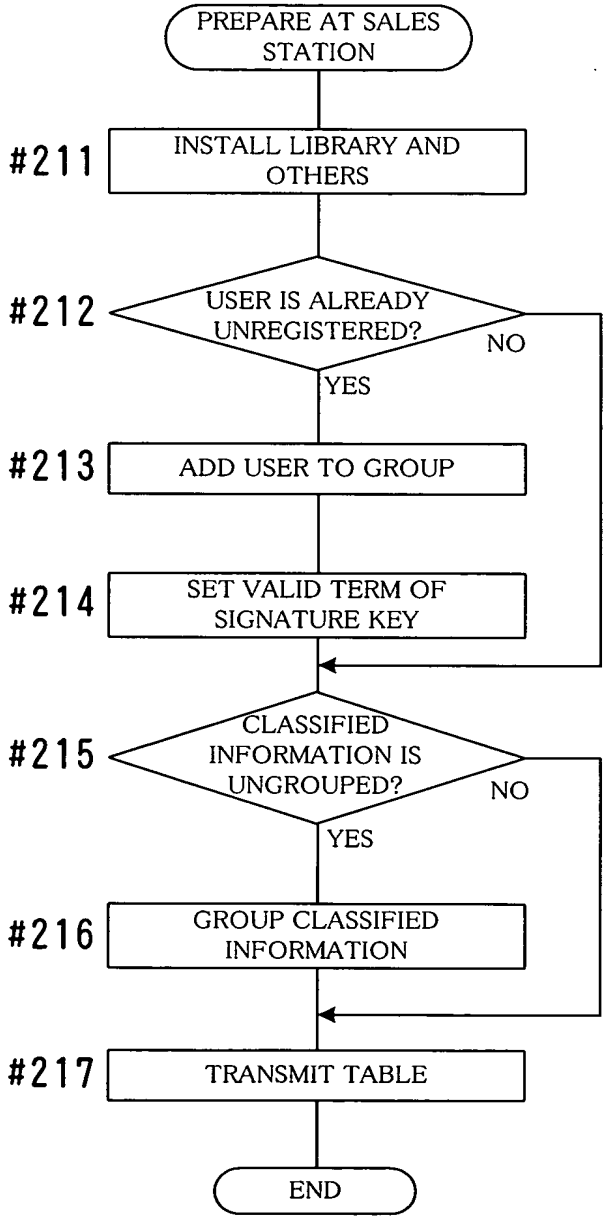

PREPARE AT SALES STATION
#211
INSTALL LIBRARY AND OTHERS
#212
USER IS ALREADY UNREGISTERED?
NO
YES
#213
ADD USER TO GROUP
#214
SET VALID TERM OF SIGNATURE KEY
#215
CLASSIFIED INFORMATION IS UNGROUPED?
NO
YES
#216
GROUP CLASSIFIED INFORMATION
#217
TRANSMIT TABLE
END

FIG.19A

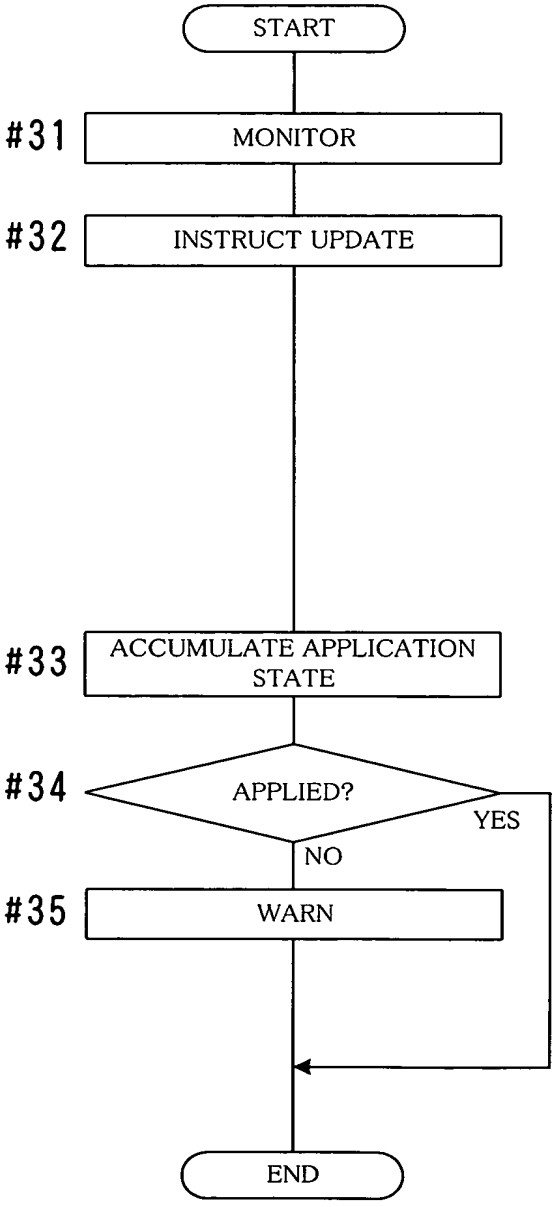


FIG.19B

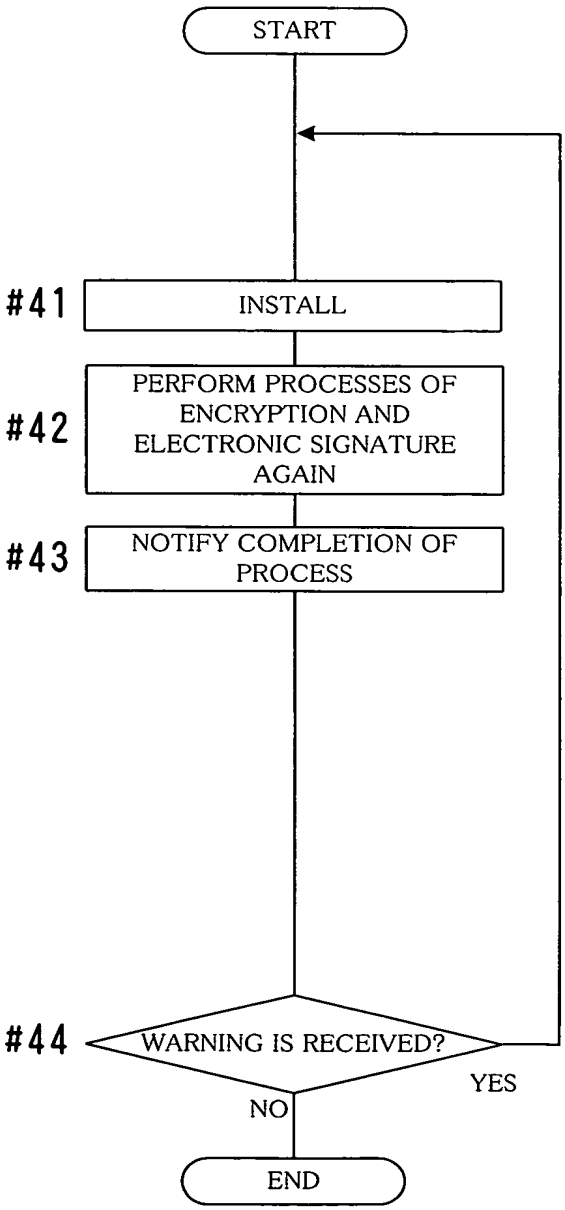


FIG.20

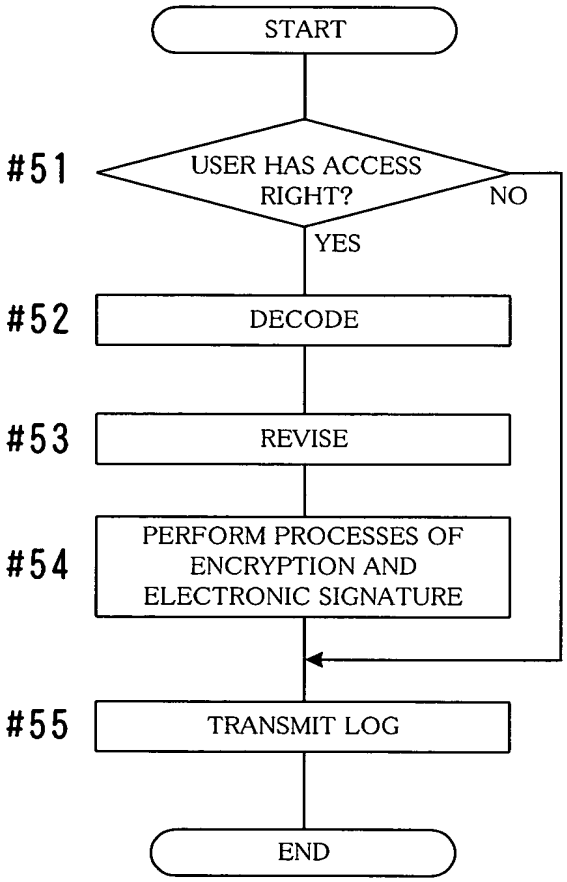
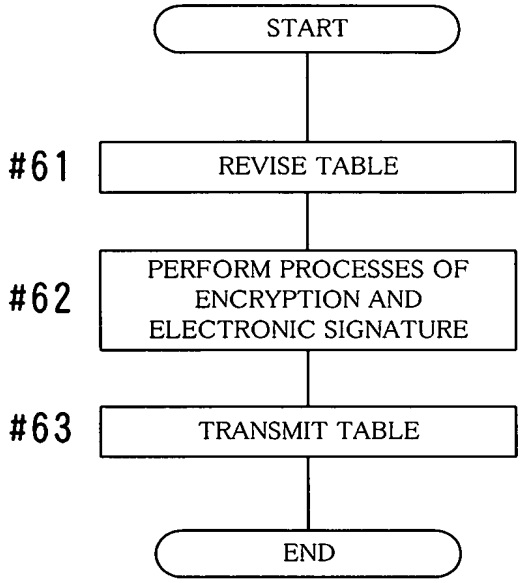

START
#51
USER HAS ACCESS RIGHT?
NO
YES
#52
DECODE
#53
REVISE
#54
PERFORM PROCESSES OF ENCRYPTION AND ELECTRONIC SIGNATURE
#55
TRANSMIT LOG
END

FIG.21


START
#61
REVISE TABLE
#62
PERFORM PROCESSES OF ENCRYPTION AND ELECTRONIC SIGNATURE
#63
TRANSMIT TABLE
END